Waste Management Plan

Prepared for:

"**IMH 1970 & 1980 Fowler Drive Ltd**"

Project: 1970-1980 Fowler Dr.

Mississauga, ON

Prepared by:

PragmaTech Waste Solutions

"**IMH 1970 & 1980 Fowler Drive Ltd**" November 21,2025

RE: Waste Management Plan - Guidance for 1970-1980 Fowler Dr., Mississauga Ont.

Thank you for the opportunity to prepare a report and provide guidance on the waste management design - guidance of a multi-residential buildings project located 1970-1980 Fowler Dr., Mississauga, Ontario.

The PragmaTech team has completed a waste stream analysis for the proposed 285 residential units, based on the documents and architectural drawings provided. Using this information, the PragmaTech team has developed a comprehensive report that includes findings from our analysis with respect to service frequencies, room sizing and equipment considerations for all agreed upon waste storage and retrieval areas, with careful consideration for the perspectives of primary stakeholders, including tenants, operations staff, and Service Providers.

The analyses, guidance and recommendations provided in this report are based on an optimized source-separated waste management program for multi-residential buildings and have been developed within the legislative context of the province of Ontario and Peel Region

PragmaTech is a full-service environmental sustainability consulting firm with over 30 years of experience in the waste management industry. Our team of Environmental Performance Consultants, Process and Project Managers, Certified Waste Auditors, Technicians and Analysts are well equipped to support the next stages of this waste management program and provide guidance for the implementation of well-executed waste management decisions throughout the course of the project. Subsequent sections of the Scope of Work will be delivered on a jointly approved timeline.

We would be happy to provide additional information or participate in further discussion on how PragmaTech can continue to be of service during this project.

Kind Regards,

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1.0 Introduction

PragmaTech Waste Solutions ("PragmaTech") was retained by IMH 1970 & 1980 Fowler Drive Ltd to prepare a waste management design report and provide recommendations on the creation of an optimal waste management program pertaining to regulations, waste generation, equipment requirements, and optimal bin maneuvering. The property at 1970-1980 Fowler Dr., Mississauga Ontario, the following waste management design report pertains to the proposed development of a multi-residential complexes that contains more than six dwellings.

Project direction, architectural drawings, and information regarding the proposed multi-residential development and waste management plans were provided by IMH 1970 & 1980 Fowler Drive Ltd. The analyses and recommendations provided in this report are based on an optimized source-separated waste management program and have been developed within the legislative context of Peel Region and the province of Ontario.

Disclaimer: During the preparation of this report, PragmaTech Waste Solutions has developed recommendations for appropriately sized equipment to adequately reach the goals of an optimal waste management program. Although recommendations have been provided with respect to specific pieces of equipment, these are simply suggestions to provide context to the report. Please note that PragmaTech holds no bias towards specific manufacturers *or* their equipment. Further, waste generation volumes may vary (e.g., increase) depending on building occupancy rates (number of tenants in each dwelling).

2.0 Waste Management Regulations

1970-1980 Fowler Dr., Mississauga, Ontario is located in Peel Region and must abide by the regional and provincial regulations for a multi-residential complex containing more than six dwellings.

2.1 By-Law 35-2015 Regional Municipality of Peel

By-law 35-2015 regulates the collection of waste in Peel Region. The following link describes the materials that are accepted into the source separated recycling programs in this region.
https://www.peelregion.ca/waste/recycling/#recycling-acceptable
www.peelregion.ca/council/bylaws/carchive.asp

Recyclable Materials allowed in the Region's Recycling Program
The following items shall be emptied, rinsed and separated from Waste to be collected as Recyclable Materials as stipulated by *O. Reg. 101/94*, as amended:
(i) aluminum foil trays and pie plates (flattened and folded in quarters);
(ii) boxboard, including cereal, cookie, frozen food (liners removed), tissue boxes, shoe boxes, egg cartons, detergent boxes (emptied and flattened);
(iii) cardboard (flattened and placed in the Recycling Receptacle with the lid closed);
(iv) empty paint and aerosol cans (paint lids removed and placed in Recycling Receptacle; aerosol can caps removed and placed in the Garbage);
(v) glass bottles and jars (lids removed and placed in the Garbage);
(vi) metal food and beverage cans;
(vii) milk and juice cartons and boxes;
(viii) paper, including newspapers, catalogues, magazines, telephone and paperback books, household paper, junk mail, envelopes, non-metallic gift wrap and cards;
(ix) polyethylene plastic bags (i.e. grocery bags tied in one plastic bag), plastic film and overwrap;
(x) plastic bottles, jugs, jars and containers (caps and lids removed and placed in the Garbage); and
(xi) polystyrene foam blocks, egg cartons and take-out food containers;
(xii) spiral wound containers; and

(xiii) mixed rigid plastic containers including clamshell packaging used for fruits, vegetables and bakery products; large clear plastic tubs, lids and trays used for salads, cakes, delicatessen and cooked chicken; clear plastic egg cartons; take-out containers and microwavable trays; garden nursery pots, cells, trays and flats; plastic vitamin and prescription bottles.

Recyclable Materials <u>do not</u> include:
(i) automotive parts;
(ii) window blinds;
(iii) dishes and cookware including pots and pans, plastic cups, drinking glasses, ceramics, plastic and metal utensils, food wrapping and reusable containers;
(iv) foam / "popcorn" packaging;
(v) hard plastic toys, large plastic pails, plastic and metal coat hangers, compact and DVD discs and, cassette and VHS tapes;
(vi) lamps;
(vii) Municipal Hazardous and Special Waste, including propane tanks or fireworks (active, used or duds);
(viii) Home Health Care Waste;
(ix) household electronics and small appliances;
(x) paper and plastic take-out beverage cups, lids and stir sticks;
(xi) take-out containers, cookie and chip bags and crinkly bags;
(xii) pool covers or liners or inflatable pools;
(xiii) shoes and textiles;
(xiv) shredded paper;
(xv) sporting equipment;
(xvi) storage containers or laundry baskets;
(xvii) tarps;
(xviii) window glass and mirrors; and
(xix) wood.

2.2 Waste Legislation Changes in Ontario

Ontario is shifting to a circular economy with a new waste management approach, where waste is treated as a resource that can be recovered, reused and reintegrated into the economy and production stream. Ontario's new waste management framework includes updated legislation and a strategy to guide progress that will protect the environment, drive innovation, enhance performance and competitiveness, and stimulate economic growth and development.

Bill 151, the Waste-Free Ontario Act, 2016 was passed on June 1, 2016, and enacts the Resource Recovery and Circular Economy Act 2016 and the Waste Diversion Transition Act 2016. Once fully implemented, the Bill, along with the Resource Recovery and Circular Economy Act will replace the existing waste diversion program requirements operating under the Waste Diversion Act (2002).

The Strategy for a Waste-Free Ontario: Building the Circular Economy will serve as the roadmap to divert more waste from landfills, create jobs, reduce greenhouse gas emissions responsible for climate change, save scarce resources and create a system where all resources, organic or non-organic materials are recovered, reused and integrated back into the economy. This is meant to ensure that nothing is wasted, and valuable materials destined for landfill create economic value without having negative effects on the environment.

The Food and Organic Waste Framework, released on April 30th, 2018 outlines actions for the province and municipalities to take and provides direction to the waste management industry and the IC&I sector to prevent and reduce food waste, rescue surplus food, recover food and organic waste from disposal, and support beneficial uses of end products such as compost, digestate and biogas.

Disposal bans for specific materials are currently being reviewed by the province and are included in public consultations. The primary materials considered for disposal bans include:

- food waste
- materials designated under existing waste diversion programs
- beverage containers
- corrugated cardboard and some paper materials
- fluorescent bulbs and tubes

The proposed Food and Organic Waste Framework, Strategy for a Waste-Free Ontario, and the 5-year Climate Change Action Plan were developed to work together to help fight climate change by reducing greenhouse gas emissions from landfilled materials that could otherwise be reduced, reused, recycled, composted and reintegrated into the economy.

2.3 5 Year Implementation Plan – Strategy for a Waste-Free Ontario

2018 – Implementation of the Food and Organic Waste Action Plan: begin implementing the first policy statement; beginning with designating new materials under the producer responsibility regulations (e.g. batteries, fluorescent bulbs and tubes, additional materials); develop and consult on disposal bans (e.g. good waste, materials under existing waste diversion program); and develop and consult on amendments to the 3R's regulations.

2019 – Begin implementing the amended 3R's regulations.

2020 – Interim goal of 30% diversion achieved. Complete the transition of existing waste diversion programs (except Blue Box) and designate additional materials under producer responsibility regulations (e.g. mattresses, carpets, furniture).

2021 – Begin implementing disposal bans on material under existing waste diversion programs.

2022 – Implement a possible food waste disposal ban and release a progress report on the Waste-Free Ontario Strategy.

2.4 IC&I Source Separation Programs– Ontario Regulation 103/94

According to *O. Reg. 103/94*, a source separation program must be implemented within designated multi-residential buildings and include procedures and activities to separate recyclables from other waste at the source (point of generation). These procedures and activities must include the provision of facilities for the collection, handling and storage of recyclables, including suitable containers for tenants to deposit their recyclables. These containers must be conveniently located, properly sized, and adequately able to contain the recyclable materials. Reasonable effort must be made to ensure that full use of the program is made. The program must be communicated to all employees and tenants to ensure that source separation procedures, responsibilities and equipment use are properly understood and followed.
For more information, please visit: https://www.ontario.ca/page/waste-management

2.5 Ontario Regulation 102/94 – Part IV – Large Construction Projects

The following section outlines the requirements governing large construction projects with respect to Waste Audits and Waste Reduction Work Plans under *O. Reg. 102/94*. The 1970-1980 Fowler Dr. project is subject to the following section from https://www.ontario.ca/laws/regulation/940101. ***Please review this section carefully*.**

PragmaTech specializes in conducting Waste Audits and preparing Waste Reduction Work Plans in accordance with Ontario legislation, and would be happy to provide this service to ensure the project meets its provincial compliance obligations.

PART IV
LARGE CONSTRUCTION PROJECTS

19. (1) This Part applies to a person who undertakes, on their own behalf or on behalf of another person, a construction project consisting of the construction of one or more buildings with a total floor area of at least 2,000 square meters.
(2) In this Part,

"builder" means a person described in subsection (1). O. Reg. 102/94, s. 19.

20. (1) The builder shall conduct a waste audit covering the waste that will be generated in the construction project. The audit shall also address the extent to which materials or products used consist of recycled or reused materials or products.

(2) After conducting the waste audit, the builder shall prepare a written report of the audit. O. Reg. 102/94, s. 20.

21. The builder shall prepare a written waste reduction work plan, based on the waste audit, to reduce, reuse and recycle waste generated in the construction project. O. Reg. 102/94, s. 21.

22. The builder shall implement the waste reduction work plan. O. Reg. 102/94, s. 22.

23. The waste reduction work plan shall include measures for communicating the plan to the workers at the construction site and, as a minimum, those measures shall require,

(a) that the plan or a summary be posted at the construction site in a place where most of the workers will see it; and

(b) if a summary is posted that any worker who requests to look at the plan be allowed to do so. O. Reg. 102/94, s. 23.

24. (1) The report of the waste audit and the waste reduction work plan required under this Part shall be prepared before construction work begins at the site.

(2) If construction work has begun at the site before this Regulation comes into force, the following transitional rules apply with respect to the waste audit, the report and the plan:

1. The report and plan shall be prepared within six months after this Regulation comes into force.
2. The report and plan need not be prepared if all work is finished within six months after this Regulation comes into force.
3. The waste audit need not cover any waste generated within six months after this Regulation comes into force.
4. The plan need not address any waste generated within six months after this Regulation comes into force. O. Reg. 102/94, s. 24.

3.0 Environmental Sustainability & Circular Economy Framework

Effective resource management practices that consider the full life-cycle of materials are critical to environmental sustainability. The movement towards a circular economy is putting resource recovery and waste reduction at the forefront of effective waste management practices.

We recommend that you regularly review and revise your Waste Management and Procurement Policies and Practices to ensure that every effort is made to create integrated systems where nothing is wasted and waste (destined for landfill or incineration) is treated as a valuable resource for recovery and reuse and is put back into the economy without having negative effects on the environment.

In addition to environmental and social responsibility, companies have a legal obligation to demonstrate due diligence for waste management and resource recovery. To ensure compliance with these obligations, we recommend using continuous quality improvement and employee/tenant engagement best practices to develop innovative waste management programs and practices. We also recommend that you partake in regular monitoring and reporting of program performance indicators. For programs using contractors with policies and practices, we recommend continuous monitoring to ensure that transparency and integrity are maintained in their sustainable waste management practices.

Waste reduction and resource recovery should be the first consideration in product, processing and packaging design. Strive to purchase materials and equipment that can be recovered or recycled at their end of life, as well as those produced using recycled and/or recyclable materials. Ensure that items such as paper, paper towel, paper cups, and office equipment are addressed in the procurement policy. Encourage company employees, management responsible for product and/or space design and procurement personnel to source and purchase products containing recycled content and/or are recyclable after use.

Reduce, Reuse and Recycle

Continue to explore innovative ways to reduce or eliminate waste. There is a common misconception that recycling is the easiest, most cost-effective and most convenient form of waste diversion. In fact, REDUCTION is the most efficient waste management and environmental stewardship practice. Reducing waste production can lead to conserving natural resources, decreasing toxicity of wastes, and reducing the cost impact on communities, businesses, and consumers. Most waste reduction strategies fail because of using the 3Rs (REDUCE, REUSE and RECYCLE) in the reverse order.

Some of the costs associated with recycling could be reduced or eliminated by reducing the types and/or volume of materials generated. Some potential cost savings may be associated with material handling, equipment costs, disposal and contamination fees, floor space and storage areas, employee training, recycling program promotion and sourcing available end-markets.

Disposal

Environmental Sustainability and Stewardship legislation changes continue to target specific materials for reduction/removal from landfill disposal. In addition, landfill costs are increasing due to the shrinking availability of space. These costs and conditions are key drivers for companies to develop innovative solutions and alternatives to dispose of their waste.

In Canada, incineration or "waste to energy" is considered a *disposal alternative*, NOT a method of *waste diversion*. Incineration does not promote the 3Rs. An important distinction is that burning waste destroys resources; it does not reduce waste. In addition, burying or burning waste may discharge toxins or pollutants into land, water or air that could prove to have negative human and/or environmental consequences. It is therefore important to consider both the human and environmental impacts associated with all waste disposal methods.

4.0 Waste Generation Analysis

The following waste generation data were determined by calculating the volume of all waste materials generated on a weekly and annual basis. The analysis was conducted to determine the anticipated generation values for the following waste streams:

- Non-Recyclable Waste (Garbage)
- Co-mingled Containers/Cans/Bottles/Jars/Jugs
- Cardboard/Mixed Fibres
- Other Recycling (E-waste, batteries, scrap metals and light bulbs etc.)
- Organics/Compost

Tables 1 and 2 below provide estimates for the new proposed building of the waste generated per waste stream on a weekly and yearly basis, along with the total anticipated waste generation for each waste stream. Using these estimates, PragmaTech can determine the appropriate equipment needs and space requirements to maximize efficient handling and disposal of each waste stream program. Sample data using waste generation volumes for similar projects, along with multi-residential waste audits for properties of a similar type and relative size were used by PragmaTech to perform calculations and determine the following estimates.

Residential Tables 1 & 2: Estimated Weekly & Annual Generation Volumes (285 Residential Unit Building)

Kg's/Week	Kg's
Cans/Bottles/Plastic	347.62
Glass Bottles	20.13
Mixed Fibres	438.02
Organic/Compost	676.78
E-waste, Light Bulbs, Scrap Metal, Batteries	2.80
Non-recyclable Waste	378.56
Total Generation	1,863.90

Kg's/Annual	Kg's
Cans/Bottles/Plastic	18,076.10
Glass Bottles	1,046.77
Mixed Fibres	22,776.86
Organic/Compost	35,192.67
E-waste, Light Bulbs, Scrap Metal, Batteries	145.38
Non-recyclable Waste	19,685.02
Total Generation	96,922.80

Please Note: The information presented in this report is based on optimal recycling practices by the residents. All calculations are based on typical occupancy per unit and may change depending on number of occupants per unit. Further, these calculations do not take into consideration initial, one-time tenant move-in waste generation volumes or bulk pickups (large items).

4.0 Storage & Equipment Considerations

Waste Room minimal requirement. (residential)

A waste room must be built in accordance with all applicable building and fire codes and be large enough to store all containers between collection days. The waste room should have adequate space for easy maneuverability of containers in a safe manner for all personnel. The room should be equipped with sufficient lighting, water supply and a floor drain so that the area may be clean on a regular basis. The waste room must be located on private property, within the building envelope. Doorways must be double doors and overhead doors with a minimum width of 1.9m. It is also suggested to have the room climate controlled to minimize odor and decay of waste/organic materials.

4.1: Residential Waste Room Container Count & Footprint

Proposed 285 Residential-unit Building.

Container Count Chart (compacted)

Waste Stream Residential	Generation	kg per yard	Number Units	Units
Cans/Bottles/Plastic	347.62	25	4.0	4-yard bin
Glass Bottles & Jars	20.13	35	1.00	95 Gallon Tote
Cardboard (Flatten)	262.81	35	2.00	4-yard bin
Mixed Fibres (mixed paper, boxboard)	175.21	30	2.00	4-yard bin
Organic/Compost	676.78	85	4.00	2-yard bin
E-waste, Light Bulbs, Scrap Metal, Batteries	2.80	25	1.00	95 Gallon Tote
Non-recyclable Waste (compacted)	378.56	100	2.00	4-yard bin

Container Footprint Chart (compacted)

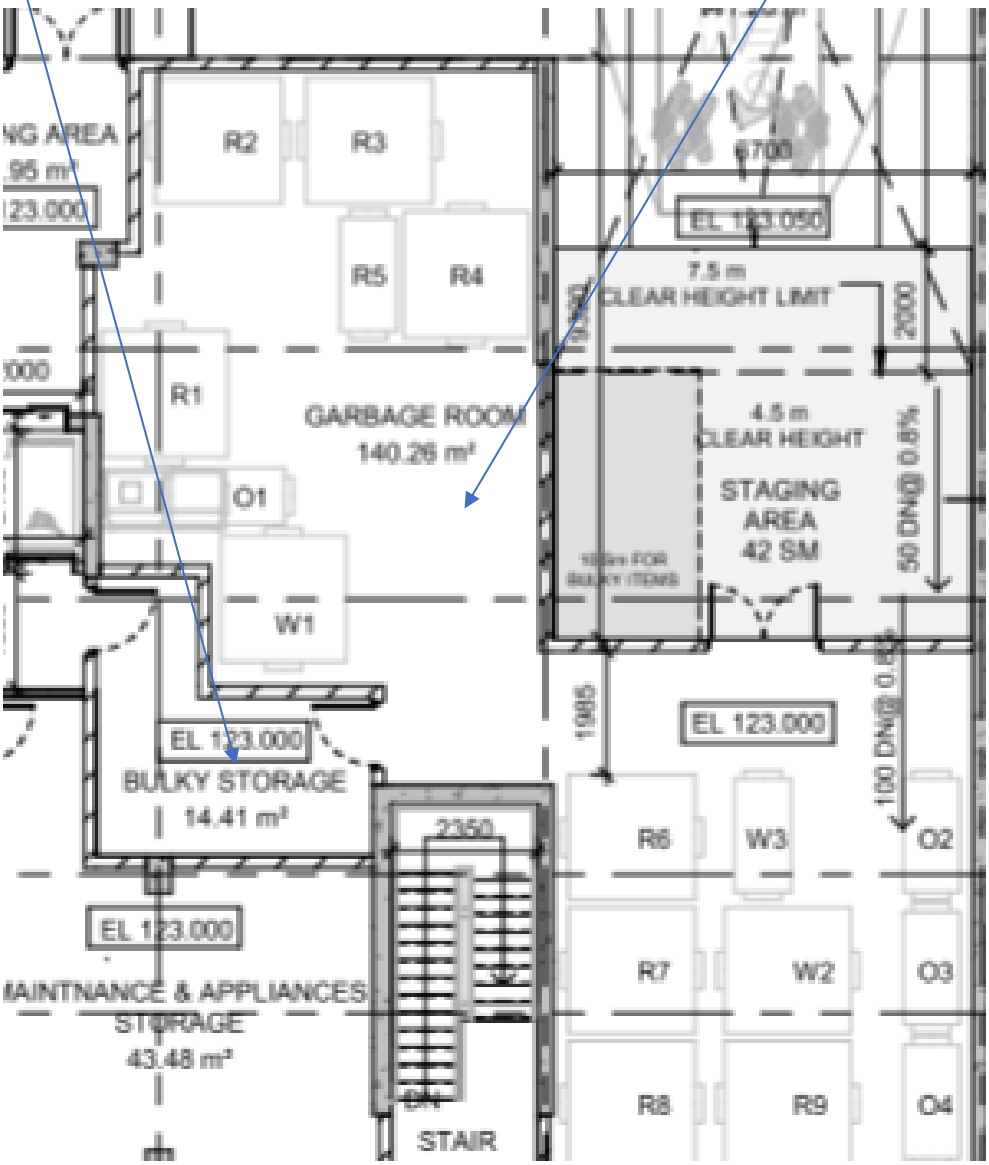
Streams	Equipment	Length (mt)	Width (mt)	Number of Units	M2
Cans/Bottles/Plastic	4-yard Container	2.01	2.03	4	16.32
Glass Bottles & Jars	95 gallon/360 L Totes	0.89	0.69	1	0.61
Cardboard (Flatten)	4-yard Container	2.01	2.03	2	8.16
Mixed Fibres (mixed paper, boxboard)	4-yard Container	2.01	2.03	2	8.16
Organic/Compost	2-yard Container	1.07	2.03	4	8.69
E-waste	95 gallon/360 L Totes	0.89	0.69	1	0.61
Non-recyclable waste (compacted)	4-yard Container	2.01	2.03	2	8.16
Compactor (generic dimensions)	Mini Max (example)	3.2	1.1	1	3.52
				TOTAL m2	54.24

Comment

When calculating all the waste/recycling materials for the building, we have considered the 285 residential units. The waste/recycling room will be located at ground level and has an area of 140.265 m². The bulk waste storage area of 14.41 m² has been established and is indicated on drawings.

Waste/Recycling Room Size Verification

Waste/Recycling Room located Ground Level 144.35 m²



Comments

The residential waste/recycling room meets the requirements for Peel Region.

Waste/Recycling Room Floor Ratio

(140.265 m2/ 54.24 m2) = 2.58

The ratio of 2.58 provides sufficient floor space for ease of use and bin maneuverability.

5.0 Organics Specifications

Peel Region does have service for Source Separated Organics (SSO) for large multi-residential properties only for curb side collection, Ontario is creating a policy to ban organics from landfill and to make the recycling of organic material mandatory across the province. I would highly recommend that an organics/compost program be set up from the beginning. Doing so will assist with implementing the program right from the start and reduce the amount of organic/compostable waste sent to landfill. Further, diverting these materials will reduce odour issues in the garbage containers. Organic collection would have to be contracted with a private hauler.

Lots of items besides food go in your green bin. These items are examples of what to put in your green bin:

- paper napkins, paper towels
- loose shredded paper
- cotton balls
- greasy pizza boxes
- microwave popcorn bags
- corn stalks
- house plants (soil removed)
- food scraps
- fruit and vegetable peels
- bones, meat and fish
- coffee grounds and filters

2-yard bin

Organic 64 Litre cart

Kitchen Catcher

Organics collection:

1.) A climate-controlled organics room should be considered as part of the design. This room would house full totes of organics until pickup. The climate control will reduce smell, insects and rodent issues that may be present in waste rooms that are susceptible to temperature variation. There is the option to have the garbage room be completely climate-controlled or have a separate climate-controlled section of the garbage room to house organic waste. The pictures above provide examples of the types of receptacles that are typically used for organics.

6.0 Design Recommendations from Peel Region

Peel Region has requirements for new developments that must be considered if the development will require city pick up. The developer must demonstrate compliance with the requirements set out in this section in the site plan submission. The design of a development must include features that allow materials to be set out for recycling as conveniently for all occupants as it is to set out garbage.

The Regional Municipality of Peel's Waste Collection Design Standards Manual is to be followed if the dwelling will be utilizing the Region's Waste Management services. The manual is attached at the end of this report in Appendix A. The dwelling must provide the front-end garbage bins and Peel Region will provide the recycling carts or front-end bins.

Please note that the link located in Appendix A includes all subsequent Appendices mentioned throughout this report.

6.1 Waste Collection Service Design Standards – Peel Region

Element	Waste Collection Service Design Standards
Convenience	The design of developments must include features that make the set-out of recyclable materials as convenient to each occupant as that of garbage
Drawings	The collection point and storage area, including the number and size of front-end bins to be used for garbage and the number, the size and type of recycling receptacles (front end or carts) the compactor and chute systems are to be clearly shown and labeled on drawings (e.g. site plan, ground floor plan, waste collection plan) The drawings must also show the waste collection vehicles route through the development and radius of every turn must be labeled
Supply of waste receptacles	Multi residential complexes and stacked townhouses must supply front end bins for garbage collection. Recycling cart or front-end bins for recyclable materials will be provided by the Region
Approach	A minimum of 18 m straight head-on approach to the collection point. This approach is to be level (maximum 2% slope), solid (able to support a 35-tonne collection vehicle) and the same width as the collection point
Overhead clearance	A minimum clearance height of 7.5 m from the concrete pad must be provided at the collection point and must be free of obstructions (e.g., sprinkler systems, ducts, balconies, wires and trees. Outside the collection point, a clearance height of 4.4 m from the top of the access road must be provided along the waste collection vehicle access and egress route and must be free of obstructions (e.g., sprinkler systems, ducts, balconies, wires and trees.
Accessibility	The maximum walking distance from a dwelling unit to the closest concealed collection point or storage room must be less than 100 m.
Owner notification	Developers will be required to inform prospective owners of the location of the concealed collection point in: • Agreements of purchase and sale, a written contract between a seller and a buyer for the purchase and sale of particular property; and • The condominium declaration and description, also sometimes known as Master Deed, is a fundamental document that establishes the existence of and further governs the use and maintenance of a condominium property.

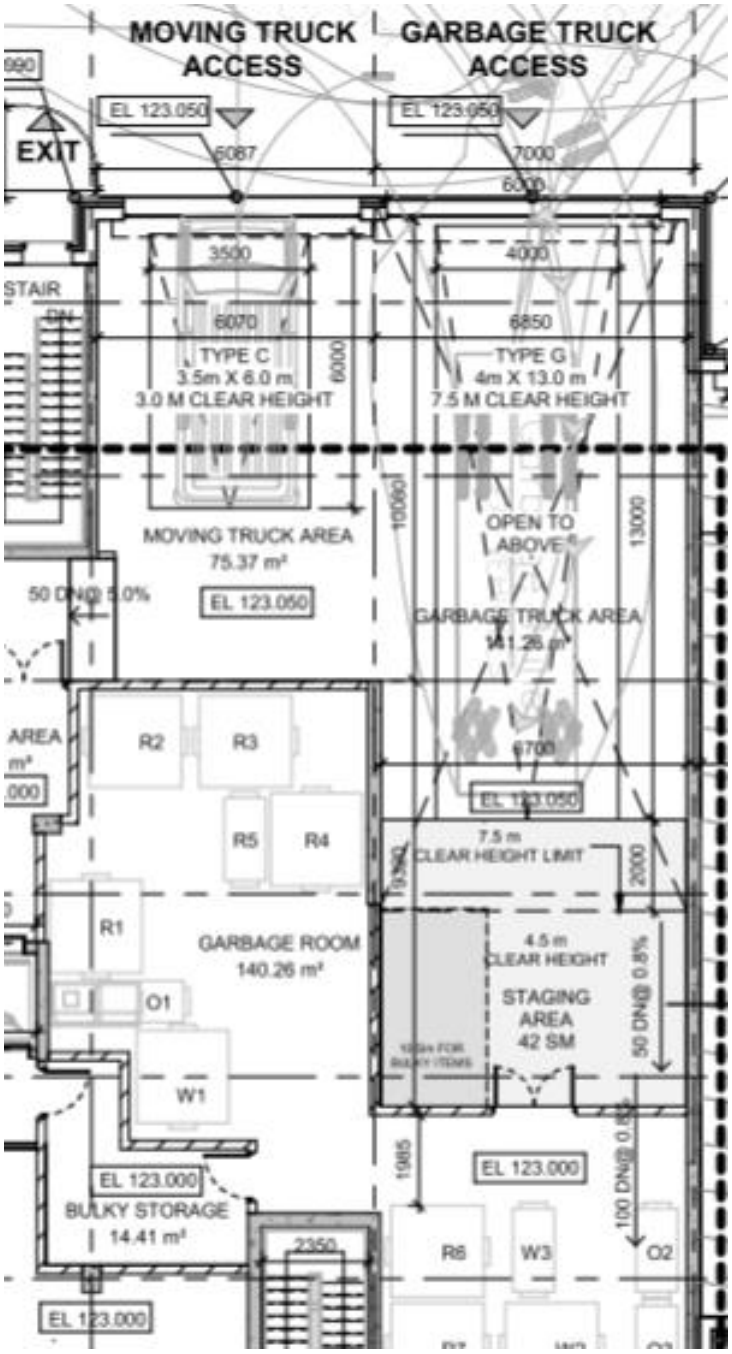
6.2 Collection Point Requirements

Element	Waste Collection Service Design Standards
Structure	• A solid, level (maximum 2% slope) and reinforced concrete pad. • The concrete pad must be of necessary strength to prevent differential settlement and/or cracking that would affect Waste Collection
Size	• Minimum width of 6 m for the storage of multiple Front-End Bins.
Access	• A minimum unobstructed distance of 18 m must be provided to enable the Waste Collection Vehicle to wholly enter the Indoor Collection Point. • Approach is to be level (maximum 2% slope) solid (able to support a 35-tonne fully loaded collection vehicle) and the width of the Collection Point
Bollards	Bollards or a concrete curb must also be installed at the rear of the Collection Point to protect the structure wall from damage when Front-End Bins are picked up or returned in place by the Collection Vehicle

Area Requirement	• The Collection Point must be a minimum of 2 metres deep for a 3 yd Front-End Bin and 3 m deep for 4 and 6 yd Front-end Bins.
	• The Collection Point should be designed with sufficient area to eliminate the need for property management staff to Jockey Front-End Bins to make the accessible to the Collection Vehicle.
	• Where these requirements cannot be met, reliance on property management staff to facilitate Waste Collection will be considered at the Commissioner's discretion, subject to the following conditions:
	  ○ The driver is not required to exit the Waste Collection Vehicle to facilitate collection;
	  ○ Property management staff is responsible for jockeying of Front-end Bins during collection;
	  ○ The Region will not be responsible for the emptying bins that are inaccessible to the Waste Collection Vehicle; and
	  ○ The property management staff must be visible to the Easte Collection Vehicle on approach to the site; otherwise the Waste Collection Vehicle will not enter the site

7.0 Staging Areas and Waste/Recycling Truck Route

For safety for all a flashing warning light system to prevent pedestrian and vehicle traffic from crossing the path of a reversing collection vehicle exiting the collection point areas will be installed and a convex mirror will be used at all the collection point areas to help assist the driver in reversing from the collection point areas



Staging Area Verification

Waste, recycling and organics would be collected on separate days. The charts below indicate the footprint of containers for each stream of waste/recycling. **Note:** onsite staff will be available to maneuver bins on collection day to assist the collection vehicle driver

Streams	Equipment	Length (mt)	Width (mt)	Number of Units	M2
Cans/Bottles/Plastic	4-yard Container	2.01	2.03	4	16.32
Glass Bottles & Jars	95 gallon/360 L Totes	0.89	0.69	1	0.61
Cardboard (Flatten)	4-yard Container	2.01	2.03	2	8.16
Mixed Fibres (mixed paper, boxboard)	4-yard Container	2.01	2.03	2	8.16
				TOTAL m2	33.26

Streams	Equipment	Length (mt)	Width (mt)	Number of Units	M2
Organic/Compost	2-yard Container	1.07	2.03	4	8.69
				TOTAL m2	8.69

Streams	Equipment	Length (mt)	Width (mt)	Number of Units	M2
Non-recyclable waste (compacted)	4-yard Container	2.01	2.03	2	8.16
				TOTAL m2	8.16

8.0 Other Waste Equipment Considerations (if applicable)

8.1 Biomedical Waste Consideration and Equipment

Biomedical Waste

A "biomedical waste generating facility" refers to any facility where biomedical waste is likely to be generated, including, (a) a human health care and residential facility.

"Sharps waste" refers to blades, needles, syringes (including safety engineered needles), laboratory glass, and other materials capable of causing punctures or cuts and which have come into contact with human blood waste, animal blood waste, or other human and/or animal bodily fluids.

Disposing of Biomedical Waste

- Every facility should have a clear and accurate list of items that fall under the category of biomedical waste. This will make it easy for staff to identify waste and properly dispose of it in the appropriate red or yellow bag/container. Most facilities create a booklet or poster for this purpose.
- Note that urine, feces, and diapers are not considered biomedical waste unless they are visibly contaminated with blood, in which case they must be handled with care. Otherwise, they can be disposed of with regular waste.

Biomedical Containers

Sharps Container

8.2 Common Area Waste and Recycling Containers (suggested)

Waste and Recycling Considerations

Exterior

Several areas throughout the property will require three or four-stream disposal receptacles for both interior and exterior common areas to accommodate the disposal of non-recyclable waste (garbage) and single stream recycling (blue bin). The specific areas that will require a multi-stream disposal receptacle are:

- Outside the main lobby and entrances
- Underground Parking at elevator entrances (if applicable)

Interior

- All amenity spaces.
- Screening room

The receptacles can be located within the general vicinity of the above-mentioned areas to avoid obstructing or conflicting with other potential design elements and/or furniture design layouts. Interior lobby area receptacles are not warranted, as the exterior receptacles located at the lobby entrance negate the need for interior receptacles, thereby maintaining the aesthetics of the lobby. The use of external receptacles only has proven successful in many applications and helps maintain a clean and odorless interior lobby.

Placing exterior organic/compost disposal receptacles for use by the general public is not recommended and should be avoided due to potential pest issues.

Preferred locations for organic/compost bins are any areas where food is prepared and/or served, such as:

- BBQ Areas (if present)
- Amenity Areas/Rooms containing kitchens (e.g., Party Rooms)

The mail rooms (if any) will require a single stream "Paper Recycling Only" bin, as these areas will generate a considerable amount of paper recycling from mail/newspapers/flyers. The absence of a non-recyclable waste (garbage) bin will ensure that no recyclable paper material will enter the waste stream.

Pet Waste Disposal Considerations

Pet waste is considered non-recyclable waste in Halton Region and is required to enter into the non-recyclable waste stream (garbage). However, pet waste can cause odour issues when placed into common area non-recyclable waste bins, so a self-contained disposal bin specifically for pet waste is recommended.

Cigarette Disposal Considerations

Cigarette waste is considered non-recyclable waste in Halton Region and is required to enter the non-recyclable waste stream (garbage). Providing designated bins to capture cigarette butts will help to reduce the amount of litter on the grounds, lessening the need for constant property maintenance. Cigarette specific disposal bins also ensure that the contents are safely secured, minimizing the risk of fire that could occur using other standard disposal bins that may contain potentially flammable materials.

8.3 Additional Equipment Recommendations and Considerations (optional)

Consider additional space in the waste area to house a tractor/bin tugger that is used to move the garbage and recycling containers from the indoor storage area to the outdoor collection area for pickup. Waste and organic containers can be very heavy for personnel to move. An example of equipment is provided below. **These are recommended to move bins from the waste storage area to the loading dock staging area, especially the 3 or 4-yard open top containers.**

Bin Tugger

Tractor

Small tractors are very useful for moving bins around a property. They reduce the need to manually push bins, which can be difficult for site staff to handle safely. Bins can be attached to the back of the tractor and can be easily pulled to the Collection Area for pickup. A custom constructed hitch and tow bar will be required to attach to the containers, which will require a pull plate to be installed.

9.0 Waste Room Considerations

It is important to consider the functionality of the space for tenant needs. An area dedicated to large bulky items must be included in the design. This room should have proper lighting that is bright enough for all tenants to use the space safely. The space must not have access to the compactor by individuals who are not properly trained to use a compactor.

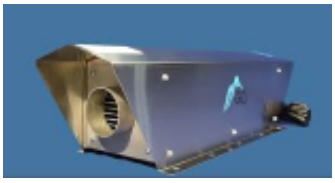
Signage that includes pictures and instructions on proper disposal and "what goes where" information should be strategically placed on the walls of this drop off room. Signage with pictures and directions will help to alleviate contamination rates and common communication issues, such as language barriers, terminology, and font size that may prevent tenants from understanding how to properly use the source-separation programs.

Waste/Recycling Building Considerations

In any garbage area, waste will start to decompose. The decomposition rate will increase as the temperatures increases. Ensure organics are picked up on a regular basis to decrease odors and animal intervention.

This area should have the following features (these are recommendations if applicable):

- Door opening to allow 3 to 6-yard bins to be easily maneuvered through.
- Proper ventilation and possible climate control
- Proper signage and sufficient lighting with motion sensors that is bright enough for all tenants and staff to use the space safely.
- Water supply and Floor drain
- Electrical connections (for bug zapper, deodorizer, power washer etc.)



Air Purification System

Pressure Washer

10.0 Tenant Welcome Package

It is highly recommended that each tenant be provided with a welcome package upon moving into their new space. The welcome package should include the reusable blue recycling bin, organic bags and kitchen catcher for each unit along with instructions on how to properly use these bins.

The package should also include the recycling guide that indicates which materials should be recycled, as well as instructions on proper usage of the chute system and the most up-do-date by-law showing the responsibilities of tenants living in the specific area. The more information that is provided, the easier it will be for tenants to participate in recycling and organics programs, thereby reducing non-recyclable waste generation and contamination rates. An example is provided below of information that should be included in the package:

Sample

Once the tenants move in, a welcome brief on recycling best practices can be completed in the lobby or common areas during peak times (usually between 4pm to 7pm). These meetings can include draws that people can enter to win various prizes, which is a proven method to encourage and engage people to pop by, listen to the information, and ask questions.

11.0 Signage Considerations

Developing signage for all waste stream equipment and receptacles that clearly identifies which materials can be deposited into the designated equipment and bins can greatly assist with reducing contamination and increasing diversion rates.

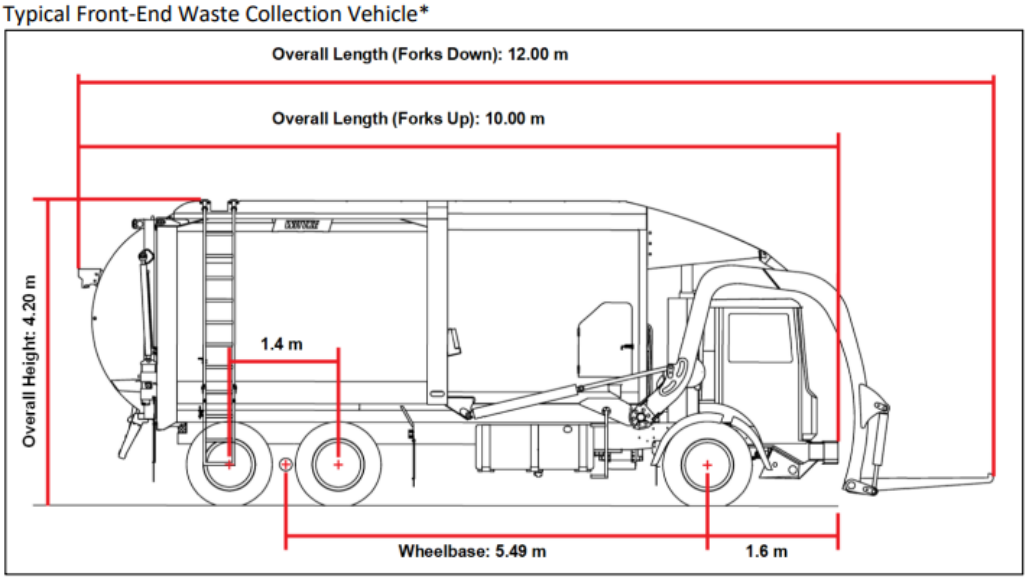
Signage should depict both images and words explaining the specific materials to be deposited into the equipment and bins so that all users are able to clearly understand program requirements. Use common terms that are easily recognizable to the public and colour-coded by program, both of which are very useful ways to help people easily identify different programs and the materials they accept. For example, the colour green is commonly used to depict organics and compost, whereas blue is often used for recycling (e.g., cans and bottles, etc.).

Appendix A Typical Collection Trucks

This collection vehicle is typical design to service residential properties, or other select properties, on front-end collection services. This type of vehicle is used to collect garbage, recycling and organics containers. Vehicle movement diagrams must show the truck driving with the forks up.

Vehicle Dimensions*	
Front Overhang	1.6 m
Wheelbase	5.49 m
Rear Wheel Spread	1.4 m
Overall Length	10 m (12 m with forks down)
Width	2.4 m
Height	4.2 m
Inside Turning Radius	9.5 m
Outside Turning Radius	14 m

Typical Front-End Waste Collection Vehicle*



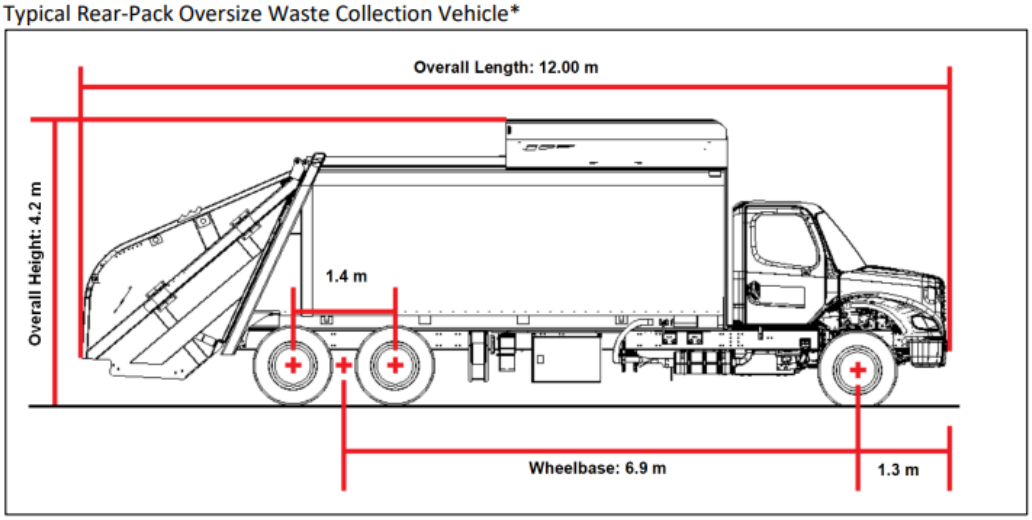
*These are approximate dimensions. Actual dimensions vary.

Typical Rear-Pack Oversized Waste Collection Vehicle

This collection vehicle is typical design to service residential properties, or other select properties, on front-end collection services. This is a two-man crewed vehicle and is used to collect oversized items. Vehicle movement diagrams may show this truck reversing into or out of a site, at the discretion of the General Manager.

Vehicle Dimensions*	
Front Overhang	1.3 m
Wheelbase	6.9 m
Rear Axle Spread	1.4 m
Overall Length	12 m
Width	2.4 m
Height	4.2 m
Inside Turning Radius	9.5 m
Outside Turning Radius	14 m

Typical Rear-Pack Oversize Waste Collection Vehicle*



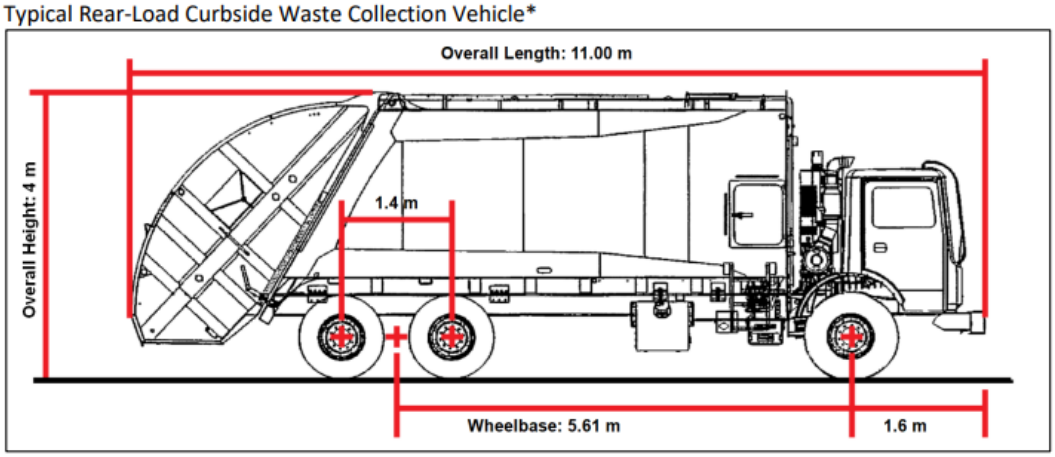
These are approximate dimensions. Actual dimensions vary.

Typical Rear-Load Curbside Waste Collection Vehicle

This collection vehicle is typical design to service residential properties, or other select properties, on curbside collection services. This type of vehicle is used to collect garbage, recycling, and organic bins, as well as oversized items.

Vehicle Dimensions*	
Front Overhang	1.6 m
Wheelbase	5.61 m
Rear Axle Spread	1.4 m
Overall Length	11 m
Width	2.4 m
Height	4 m
Inside Turning Radius	9.5 m
Outside Turning Radius	14 m

Typical Rear-Load Curbside Waste Collection Vehicle*



These are approximate dimensions. Actual dimensions vary.

Appendix B – Regional Municipality of Peel Waste Collection Design Manual

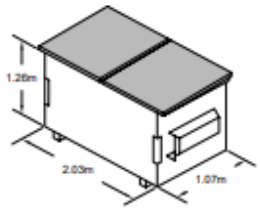
Please Note: The following link includes the Peel Region Waste Collection Design Manual, along with all the aforementioned Appendices. Document has been added as an attachment with the report.

https://www.peelregion.ca/public-works/design-standards/pdf/waste-collection-design-standards-manual.pdf

Appendix C – Regional Municipality of Peel Front End Bin Specs.

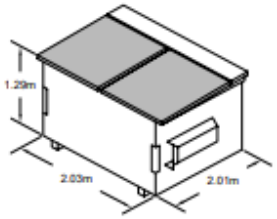
APPENDIX 6: FRONT-END GARBAGE AND RECYCLING BINS

3-Cubic Yard



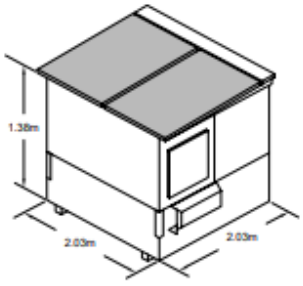
3-yard inside storage area bin
1.26m high, 2.03m, 1.07m deep

4-Cubic Yard



4-yard inside storage area bin
1.29m high, 2.03m, 2.01m deep

6-Cubic Yard



6-yard inside storage area bin
1.38m high, 2.03m, 2.03m deep

Due to their size, 6-cubic yard Front-End Bins are only to be used for Multi-Residential Complexes where Waste is to be stored externally in a Concealed Collection Point.

Note:
*3- & 4-cubic yard bins include casters.
** Garbage receptacle model and dimensions may vary depending on model and manufacturer.
*** Drawing not to scale.

Note:
Drawing not to scale

Region of Peel Waste Collection Design Standards Manual	Page No. A6-1	Revision Date: December 2019	Region of Peel working with you